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SAFE DRINKING WATER: A FEDERALISM PERSPECTIVE

A. DAN TARLOCK*

I. THE SAFE DRINKING WATER ACT AS PROTOTYPE "POST-MODERN" ENVIRONMENTAL LEGISLATION

Since 1974, the United States has had strong federal regulation of public drinking water. The Safe Drinking Water Act ("SDWA") of 1974¹ established national standards for water at the tap,² authorized land use control demonstration programs to designate critical aquifer protection areas for sole or primary source aquifers to prevent their contamination,³ and regulated the injection of wastes and drilling fluids into the ground.⁴ In response to slow Environmental Protection Agency ("EPA") implementation,⁵ the SDWA was strengthened in 1986,⁶ and reauthorized and reformed in 1996.⁷ Federal establishment of strong public drinking water standards seems easy to justify and sustain; but after the 1986 Amendments, the SDWA became increasingly controversial because of the fiscal burdens

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¹ 42 U.S.C. §§ 300f to 300j-9 (Supp. IV 1974).

² *See id.* § 300g-1.

³ *See id.* § 300h-6.

⁴ *See id.* § 300h-7.

⁵ *See* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE AND POLICY 597 (1996).

⁶ Safe Drinking Water Act Amendments of 1986 (1986 Amendments), Pub. L. No. 99-339, 100 Stat. 642 (codified at 42 U.S.C. §§ 300f to 300j-11 (Supp. IV 1986)). The technical name of the SDWA is the Public Health Service Act, because the original federal involvement in the protection of public drinking water systems dates back to 1944. Public Health Service Act, ch. 373, § 301, 58 Stat. 682, 691-92 (1944). The Act, however, is universally referred to as the Safe Drinking Water Act, the formal name for the 1974 Amendments.

⁷ Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182, 110 Stat. 1613 (codified at 42 U.S.C.A. §§ 300f to 300j-25 (West Supp. 1996)).

that it placed on all systems.⁸ Consequently, the reform debate partially became a test of the power of many of the federalism criticisms of "first generation," top-down, command and control environmental protection legislation.⁹ Although the 1974 and 1986 Acts gave the states primary enforcement responsibility if the state had adopted standards "no less stringent than the national primary drinking water regulations"¹⁰ and had adopted an adequate enforcement program,¹¹ states and local water suppliers sought greater flexibility to decide how safe drinking water should be, and at the same time pleaded lack of financial capacity to comply with the SDWA.¹²

In 1996, Congress reauthorized and amended the SDWA for the

⁸ See, e.g., *Reilly to Meet with Governors to Consider 'Crisis' over Funding, State Privacy Issues*, 23 Env't Rep. (BNA) 645 (June 12, 1992); *States Would Need 1993 Funding Doubled to Implement Drinking Water Rules, EPA Says*, 23 Env't Rep. (BNA) 3199 (Apr. 23, 1993).

⁹ First generation federal environmental legislation mandated maximum acceptable levels of pollutants without regard to cost-benefit considerations. See, e.g., Richard J. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210, 1214 n.7 (1992) (stating that "[c]ommand and control regulation, which is prevalent under federal environmental statutes, simply directs firms to produce no more than a given number of units of particular pollutants"); A. Dan Tarlock, *Local Government Protection of Biodiversity*, 60 U. CHI. L. REV. 555, 556 (1993) (noting that "[t]he first generation of environmental protection programs concentrated on toxic risk reduction because of political pressure and its amenability to New Deal command and control regulation").

¹⁰ 42 U.S.C. § 300g-2(a)(1) (1994). The 1996 Act amended § 300g-2 to strengthen state primary enforcement powers by providing that a state with primary enforcement authority with respect to existing national primary drinking water regulation shall have the same authority over newly regulated contaminants. 42 U.S.C.A. § 300g-2(c) (West Supp. 1996).

¹¹ See 42 U.S.C. § 300g-2(a)(2) (1994). Forty-nine out of 50 states have assumed primary enforcement responsibility. See U.S. GEN. ACCOUNTING OFFICE, *DRINKING WATER: WIDENING GAP BETWEEN NEEDS AND AVAILABLE RESOURCES THREATENS VITAL EPA PROGRAM* 3 (1993); Tom Kenworthy, *Water Inspections Called Lax*, WASH. POST, June 29, 1996, at A27 (stating that Wyoming is the only state which has not assumed primary enforcement responsibility).

¹² See, e.g., *States' Cash Shortfalls May Compromise Drinking Water Protection Programs, GAO Says*, 23 Env't Rep. (BNA) 1144 (Aug. 7, 1992); *States Constrained by Lack of Funds to Meet Federal Standards, GAO Says*, 24 Env't Rep. (BNA) 634 (Aug. 13, 1993).

second time since its original passage in 1974.¹³ The SDWA Amendments of 1996 ("Amendments") is the first major pollution regulatory program to be reevaluated comprehensively, reformed, and reauthorized since the first environmental decade ended in 1980.¹⁴ The Amendments represent an attempt to deal with "second generation" environmental problems. Second generation problems are characterized by the differential exposure to small amounts of hazardous substances whose long-term adverse impacts are uncertain,¹⁵ but whose regulatory costs are substantial.¹⁶ The Amendments can thus be understood on two levels: the immediate and the long-term. As does all pollution control legislation, the final product reflects a political compromise among different visions of risk protection entitlements. However, the Amendments equally incorporate some of the lessons of a

¹³ The SDWA was reauthorized and amended in 1986. H.R. REP. NO. 104-632, at 6 (1996), *reprinted in* 1996 U.S.C.C.A.N. 1366, 1371. Additionally, Congress simply amended the SDWA in 1977, 1979, 1980, and most recently, in 1988. *Id.* at 5-6, *reprinted in* 1996 U.S.C.C.A.N. at 1370-71.

¹⁴ The broad bipartisan consensus for environmental regulation ended with the election of Ronald Reagan in 1980. *See* Jerry W. Calvert, *Party Politics and Environmental Policy*, in ENVIRONMENTAL POLITICS AND POLICY 158, 158-59 (James P. Lester ed., 1989). During the following decade, several major environmental programs were extended after extensive efforts to roll them back, *see, e.g.*, Superfund Amendments and Reauthorization Act of 1986 ("SARA"), Pub. L. No. 99-499, 100 Stat. 1613 (codified at 42 U.S.C. §§ 9601-9674 (Supp. IV 1986)), or to avoid the regulation entirely, *see, e.g.*, Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (codified at 42 U.S.C. §§ 7401-7671q (Supp. II 1990)).

¹⁵ *See, e.g.*, Mark E. Rushefsky, *Elites and Environmental Policy*, in ENVIRONMENTAL POLITICS AND POLICY, *supra* note 14, at 262.

¹⁶ An official in EPA's Office of Regulatory Enforcement reported to a 1996 United Nations Conference that:

Many of the small and very small public water systems experience particular difficulties in complying with drinking water regulations. Because they serve few people, they have a small rate base; therefore they have little or no money for system improvements which may be required due to the regulations

Lack of financial capability is not limited to the small and very small systems. Many of the medium, large, and very large systems, especially those owned and/or operated by municipalities . . . have difficulties raising revenue needed for major improvements.

Betsy Devlin, *Protecting Drinking Water Quality Through the Clean Water Act and the Safe Drinking Water Act*, 1 FOURTH INTERNATIONAL CONFERENCE ON ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT: CONFERENCE PROCEEDINGS 491, 497 (Jo Gerardu & Cheryl Wasserman eds., 1996).

quarter of a century of environmental management, especially with respect to the allocation of risk assessment and management responsibility among different levels of authority. These second generation adjustments are based on four principal premises set out in section three of the 1996 Amendments. First, small suppliers lack the financial capacity to comply with federal standards.¹⁷ Second, the maximum contaminant level ("MCL") and maximum contaminant level goal ("MCLG") approach¹⁸ established by the 1974 SDWA provides too much risk protection (too few health benefits) compared to the costs of compliance.¹⁹ Third, the process of contaminant selection can be improved by "sound" science.²⁰ Fourth, the appropriate level of regulation can be improved by the application of "sound and objective science"²¹ and benefit-cost analysis.²²

Since initial pollution control responses were put in place in the 1970s, there have been important developments in the underlying science of risk assessment and management, and in the capacity of states and local governments to assume environmental protection responsibilities. However, for the past fifteen years, the polarized politics of environmental protection have made it difficult to apply these lessons in order to revise and adapt our first generation programs to incorporate rationally the lessons we have learned since the mythic late 1960s and early 1970s. The public has been presented with the false choice of rolling back protection levels to restore the pre-environmental decade status quo or holding on to past programs with conservative risk assessments,²³ regardless of their current rationality. One of the most important lessons emerging from many environmental disputes is the need to rethink the federalism models on which pollution control and resource conservation programs were based in order to better tailor risk assessment to specific geographic circumstances and to recognize the

¹⁷ See Pub. L. No. 104-182, § 3(2), 110 Stat. 1613, 1614 (1996).

¹⁸ See *infra* notes 51-60 and accompanying text.

¹⁹ See Pub. L. No. 104-182, § 3(7), 110 Stat. at 1615 (stating that "in considering the appropriate level of regulation for contaminants in drinking water, risk assessment . . . and benefit-cost analysis are important analytical tools for improving the efficiency and effectiveness of drinking water regulations to protect human health").

²⁰ See *id.* § 3(5).

²¹ *Id.* § 3(7).

²² See *id.*

²³ See *infra* notes 186-89 and accompanying text.

inevitable trade-offs involved in risk protection.²⁴

This article examines the way in which the current environmental federalism debate influenced the Amendments. It challenges the widespread assumption that toxic risk assessment and management to protect people from involuntary exposure to hazardous substances is an exclusive national responsibility because everyone has an equal entitlement to safety.²⁵ Instead, it argues that, like all resource allocation problems, there is a federalism dimension to risk assessment. From this perspective, the Amendments represent a mix of old and new federalism. They reflect both the current criticisms of 1970s top-down cooperative federalism, such as the need to stop unfunded federal mandates, to encourage private and public partnerships, and to allow geographically-based risk assessments;²⁶ but they also reflect a new shared entitlement federalism. The Amendments recognize that risk assessment and management strategies need to incorporate a rule of reason and local preferences as well as national risk assessments.²⁷ But the Amendments also reflect the older "Christmas Tree" cooperative federalism. They shower money on states and local governments to plan, construct, manage, and monitor improved public water systems that meet federal standards.²⁸ The Amendments also establish many new general demonstration and other program grants,²⁹ and grants targeted toward specific

²⁴ See, e.g., J.B. Ruhl, *Biodiversity Conservation and the Ever-Expanding Web of Federal Laws Regulating Nonfederal Lands*, 66 U. COLO. L. REV. 555 (1995).

²⁵ The ethical foundation of the idea that there is no entitlement to a risk free society is set out in Mark Sagoff, *Ethical and Economic Principles*, in *LAW OF ENVIRONMENTAL PROTECTION* § 5.04, at 5-62 to 5-63 (Sheldon M. Novick et al. eds., 1987).

²⁶ See, e.g., 42 U.S.C.A. § 300j-14(a) (West Supp. 1996) (providing that states may establish programs under which community water systems may petition a state to establish source water quality protection partnerships among likely stakeholders).

²⁷ See, e.g., *id.* § 300g-1(b)(6) (granting EPA the authority to promulgate MCLs that "maximize health risk reduction benefits at a cost that is justified by the benefit").

²⁸ See, e.g., *id.* § 300j-2(a)(7) (appropriating funds to finance state public water system supervision programs); *id.* § 300j-3c (authorizing EPA to issue grants to finance the construction, rehabilitation and improvement of water supply systems); *id.* § 300j-4(a)(2)(H) (appropriating funds to finance state monitoring programs for unregulated contaminants).

²⁹ See, e.g., *id.* § 300h-8 (authorizing EPA to distribute ground water protection grants); *id.* § 300j-13 (directing EPA to establish source water quality assessments); *id.* § 300j-14(c)(1) (authorizing grants to subsidize state programs to develop community water system source water protection partnerships).

geographic areas and constituencies.³⁰

II. FEDERALISM AND SAFE DRINKING WATER

Three models of environmental federalism have emerged since the beginning of the modern environmental movement. Professor Hope Babcock summarizes them as follows:

The first is the “dual regulation” or “state primacy” model, under which states are administratively delegated regulatory primacy to enforce federal laws through existing state laws and institutions. The second is the “collaborative management” or “consensus-based” model, under which a joint federal, multi-state institution is created for the sole purpose of developing consensus derived plans that will be used by the various jurisdictions to manage federally designated natural resources. The final model is the “layered federalism” or “consistency” model, under which individual states develop and administer natural resource management plans with which proposed federal activities must be consistent.³¹

A. *The Historical Context of Federal Safe Drinking Water Protection*

Since 1974, the federal government has regulated the public and private provision of drinking water to ensure tap water meets minimum quality standards. The Safe Drinking Water Act of 1974³² is a product of the

³⁰ See, e.g., *id.* § 300j-12(p) (authorizing use of revolving loan funds to finance demonstration projects to investigate alternative approaches to financing new drinking water facilities in rural southwestern Virginia); *id.* § 300j-16(b) (authorizing grants to improve drinking water standards in colonias in Arizona, California, New Mexico and Texas). See generally Jane E. Larson, *Free Markets Deep in the Heart of Texas*, 84 GEO. L.J. 179 (1995) (discussing unregulated land use markets in the colonias).

³¹ Hope M. Babcock, *Dual Regulation, Collaborative Management, or Layered Federalism: Can Cooperative Federalism Models from Other Laws Save Our Public Lands?*, 3 W.-NORTHWEST J. ENVTL. L. & POL'Y 193, 199 (1996).

³² 42 U.S.C. §§ 300f to 300j-9 (Supp. IV 1974).

environmental decade which lasted roughly from 1969 to 1979.³³ The legacy of the first burst of environmentalism as a major political force was the enactment of federal programs in areas where there was little effective state regulation. These programs were enacted to assess the environmental impact of federal activities,³⁴ to control the major sources of air and water pollution through high national ambient and technology-forcing standards,³⁵ and to achieve the minimization of cancer and related risks from involuntary exposure to toxic chemicals through national risk assessments and low exposure standards.³⁶ The 1974 SDWA began as a straightforward, science-based public health protection program to complement the Clean Water Act, which regulates only surface water quality, by protecting captive consumers from exposure to a variety of contaminants.³⁷

The 1974 SDWA, as amended by the 1986 Amendments, was modeled after the Clean Water Act and is a classic cooperative federalism statute.³⁸ The 1974 SDWA envisioned that federal standards would be implemented by all but the smallest domestic water providers.³⁹ However, drinking water protection became more difficult as the focus of the Act shifted to protection of the public from enhanced cancer risks due to exposure to toxic substances. It proved difficult to translate the science into effective regulations⁴⁰ and the EPA's expanded and multiple regulatory missions

³³ See Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141, 1157-63 (1995).

³⁴ See National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (Supp. V 1969).

³⁵ See Clean Air Amendments of 1970, 42 U.S.C. §§ 1857-1857l (1970); Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. §§ 1251-1376 (Supp. II 1972).

³⁶ See Toxic Substances Control Act, 15 U.S.C. §§ 2601-2629 (1976).

³⁷ See 42 U.S.C. § 300g-1(b) (Supp. IV 1974). The major immediate health risks from drinking water are untreated fecal organisms which transmit human pathogens. See 1 WORLD HEALTH ORG., GUIDELINES FOR DRINKING-WATER QUALITY 8 (2d ed. 1993). Carcinogenic chemical contaminants also present health risks but the risks are generally smaller compared to microbial pollution.

³⁸ See *infra* notes 70-71 and accompanying text.

³⁹ The national primary drinking water regulations applied to all public water systems, with minor exceptions. See 42 U.S.C. § 300g. The SDWA defined a public water system as any piped water system that had at least 15 service connections or that served at least 25 individuals. See *id.* § 300f(4).

⁴⁰ See Kenneth Fairbanks Gray & Steven J. Koorse, *Drinking Water*, in LAW OF ENVIRONMENTAL PROTECTION § 16.01, at 16-2 to 16-3 (Sheldon M. Novick et al. eds., 1987).

hopelessly over-extended the agency.⁴¹ The problem of establishing effective safe drinking water levels was exacerbated by the events of the second decade of environmentalism. During the second decade, which coincided with generally polarized environmental politics of the Reagan and Bush administrations,⁴² the economic and scientific rationality of many risk-based regulatory programs was widely questioned, but the political climate was not conducive to rational debate.⁴³ The history of rational mid-course corrections and reforms, which incorporate post-enactment knowledge, is therefore not encouraging.

The debate over the rationality of risk-based environmental legislation became intertwined with the bitter issue of whether environmental laws should be rolled back, as close as possible, to pre-1970 levels, or extended to guarantee a zero risk society.⁴⁴ During the 1980s, efforts to roll back environmental regulations were countered with political victories by environmental coalitions that strengthened the fundamental structure of laws such as the SDWA and CERCLA,⁴⁵ but that did not reevaluate them.⁴⁶ The scientific weaknesses inherent in Congress' initial approach to risk assessment, however, did not change. In the 1980s, Congress reacted to EPA's slow enforcement of the SDWA by dictating an overly-ambitious regulatory agenda for EPA through the use of strict statutory deadlines.⁴⁷ The 1986 Amendments are a classic example of the culture of regulatory failure that has infected EPA almost since its creation.⁴⁸ After a decade of extensive

⁴¹ See Richard J. Lazarus, *The Tragedy of Distrust in the Implementation of Federal Environmental Law*, LAW & CONTEMP. PROBS., Autumn 1991, at 311, 340-41.

⁴² See Calvert, *supra* note 14, at 158.

⁴³ See *id.*

⁴⁴ See Lazarus, *supra* note 41, at 320 (stating that EPA has found itself in a tug-of-war between interests "wary of the economic costs of pollution control" and interests "favoring a strong federal pollution effort").

⁴⁵ 42 U.S.C. §§ 9601-9675 (1994).

⁴⁶ See Lazarus, *supra* note 41, at 340-41 (commenting that, in reaction to EPA's failure to comply with overly-ambitious statutory objectives and deadlines, Congress simply "eliminated substantial EPA discretion, imposed more deadlines, and included more prescription").

⁴⁷ See *id.*

⁴⁸ See *id.* at 321-42. "Congress responded to the perception of a national consensus in environmental protection by passing a series of laws in the 1970s that set the stage for institutional conflict and [EPA] failure." *Id.* at 323. Furthermore, "[a]mendments to the . . . Safe Drinking Water Act . . . during the 1980s . . . exhibit the same trend." *Id.* at 340-41.

debate, Congress strengthened the Act by micro-managing EPA.⁴⁹

B. *The Structure of the Safe Drinking Water Act*

Under the SDWA, the federal government establishes high national safety standards which the states then implement.⁵⁰ The EPA is authorized to set national primary drinking water regulations.⁵¹ The standards are based on two separate but related processes. First, EPA's Administrator is required to establish non-binding MCLGs for any contaminant "which, in the judgment of the Administrator, may have any adverse effect on the health of persons and which is known or anticipated to occur in public water systems."⁵² The MCLGs are set at double safety levels. The statute requires that they "shall be set at the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety."⁵³ MCLGs often are set at zero because the goal is based on detectability levels.⁵⁴ The Office of Drinking Water interpreted the 1986 Amendments as providing a zero or negligible cancer risk background standard "with feasible detection technology acting as the key constraint on regulatory stringency."⁵⁵ For example, EPA's proposed Interim Enhanced Surface Water Treatment Rule⁵⁶ sets the MCLG level for *Cryptosporidium* at zero.⁵⁷

Second, the SDWA requires that the Administrator sets MCLs for

⁴⁹ See *id.* at 341.

⁵⁰ See 42 U.S.C. §§ 300g-1, 300g-2.

⁵¹ See *id.* § 300g-1(b).

⁵² *Id.* § 300g-1(b)(3)(A).

⁵³ *Id.* § 300g-1(b)(4).

⁵⁴ See, e.g., *Natural Resources Defense Council, Inc. v. EPA*, 824 F.2d 1211 (D.C. Cir. 1987) (upholding EPA's use of zero MCLGs for known or probable carcinogens).

⁵⁵ Alon Rosenthal et al., *Legislating Acceptable Cancer Risk From Exposure to Toxic Chemicals*, 19 *ECOLOGICAL L.Q.* 269, 310 (1992).

⁵⁶ *Enhanced Surface Water Treatment Requirements*, 59 *Fed. Reg.* 38,832 (1991) (to be codified at 40 C.F.R. pts. 141, 142) (proposed July 29, 1994).

⁵⁷ See *id.* at 38,839; see also *Water Utility Group Expresses Concern on Lack of Science in EPA Microbial Rule*, 27 *Env't Rep. (BNA)* 1145 (Sept. 20, 1996). *Cryptosporidium* is the pathogen responsible for the contamination of Milwaukee, Wisconsin's water supply in 1993. See *Enhanced Surface Water Treatment Requirements*, 59 *Fed. Reg.* at 38,839; *Milwaukee Mayor Orders Tough Regulations Following Outbreak of Illness from Parasite*, 23 *Env't Rep. (BNA)* 3205 (Apr. 23, 1993).

each contaminant for which a MCLG is established.⁵⁸ The Administrator must set the MCLs "as close to the maximum contaminant level goal as is feasible."⁵⁹ MCLGs are thus the basis for establishing the national primary drinking water regulations. MCLs are not expressly technology-forcing but are set at a level which is feasible "with the use of the best technology, treatment techniques and other means which the Administrator finds . . . are available (taking cost into consideration)."⁶⁰ Variances are available, but only if a public water system ("PWS") is unable to comply with the national primary drinking water regulations "after the system's application of the best technology, treatment techniques, or other means, which the Administrator finds are available."⁶¹ MCLGs and MCLs are thus backed-up by the establishment of the best available technology for treatment facilities.⁶² In 1986, Congress also mandated two treatment techniques: filtration for surface water sources⁶³ and disinfection for ground water sources.⁶⁴

C. *Shifting Currents in Pollution Control Federalism*

Strong federal environmental programs were initially enacted to counter state political reluctance and the lack of regulatory capacity to implement programs,⁶⁵ but conditions have somewhat changed since the first environmental decade. State subordination to federal initiatives was supported by the post-New Deal principles of federalism and by the Supreme Court's federalism jurisprudence. Prior to the New Deal, the constitutional assumption was that regulatory power or competence must be exclusive either to the national government or to the states in order to protect individual

⁵⁸ 42 U.S.C. § 300g-1(b)(4).

⁵⁹ *Id.*

⁶⁰ *Id.* § 300g-1(b)(5).

⁶¹ *Id.* § 300g-4(a). Following enactment of the 1996 Amendments, variances are available for small systems, except for pre-1986 MCLs and national drinking water regulations for microbial contaminants. See 42 U.S.C.A. § 300g-1(e) (West Supp. 1996).

⁶² See 42 U.S.C. § 300g-1(b)(5) (1994); Gray & Koorse, *supra* note 40, § 16.03[1][d], at 16-16.

⁶³ See 42 U.S.C. § 300g-1(b)(7)(C)(I).

⁶⁴ See *id.* § 300g-1(b)(8).

⁶⁵ See Oliver A. Houck, *The Water, the Trees, and the Land*, 70 TUL. L. REV. 2279, 2285 (1996).

liberty through the diffusion of regulatory power.⁶⁶ The Court's rigid dual federalism subordinated the Marshallian notion of a strong national government to deal with new problems at the time when it was most relevant.⁶⁷ Eventually, however, federal power was expanded through broad readings of the Commerce Clause and the implied preemption doctrine.⁶⁸

During the New Deal, dual federalism was replaced with a *de facto* presumption that federal regulation was necessary and the gradual realization that political rather than judicial federalism was the best means to achieve the constitutionally contemplated balance between the states and the national government.⁶⁹ The fruit of this non-dual federalism was the theory of cooperative or "marble cake" federalism,⁷⁰ which underlies federal pollution programs. In cooperative federalism, the states become agents of the national government.⁷¹ The principal focus of constitutional law thus shifted from concern about the infringement of reserved state authority to an inquiry into the congressional intent behind the preemption of state regulatory authority.⁷²

⁶⁶ See Cass R. Sunstein, *Beyond the Republican Revival*, 97 YALE L.J. 1539, 1561-62 (1988) (locating the "checking" function of federalism in both classic republican and pluralist political theory); see also Akhil R. Amar, *Of Sovereignty and Federalism*, 96 YALE L.J. 1425, 1492-1519 (1987) (arguing that the purpose of federalism is to create inter-governmental competition to protect individual rights grounded in popular sovereignty).

⁶⁷ See LAURENCE H. TRIBE, *AMERICAN CONSTITUTIONAL LAW* 307-08 (2d ed. 1988).

⁶⁸ See *id.* at 308-11, 479-83.

⁶⁹ See Stephen Gardbaum, *Rethinking Constitutional Federalism*, 74 TEX. L. REV. 795, 795 (1996).

⁷⁰ The term "'marble cake' federalism" was coined by Morton Grodzins. MORTON GRODZINS, *THE AMERICAN SYSTEM: A NEW VIEW OF GOVERNMENT IN THE UNITED STATES* 8 (Daniel J. Elazar ed., 1966).

⁷¹ The Supreme Court has recently limited cooperative federalism. See *New York v. United States*, 505 U.S. 144, 166-69 (1992) (rejecting cooperative federalism except in limited circumstances where the federal government preempts state regulation or conditions federal grants upon state adoption of federal regulations).

⁷² The tradition of concern for state prerogatives, however, endures. See Deborah J. Merritt, *The Guarantee Clause and State Autonomy: Federalism for a Third Century*, 88 COLUM. L. REV. 1, 17-22 (1988) (expressing support for state rights and maintenance of the federalist structure); Robert F. Nagel, *Federalism as a Fundamental Value: National League of Cities in Perspective*, 1981 SUP. CT. REV. 81, 107-10; see also Lynn A. Baker, *Conditional Federal Spending After Lopez*, 95 COLUM. L. REV. 1911 (1995). But see David A. Dana, *The Case for Unfunded Environmental Mandates*, 69 S. CAL. L. REV. 1 (1995) (arguing that unfunded mandates are the result of accountable political processes). See generally Symposium, *Federalism's Future*, 47 VAND. L. REV. 1205 (1994) (addressing the future roles of states and the federal government).

In the past fifteen years many of the original assumptions behind cooperative federalism have changed, for both ideological and empirical reasons. Ideologically, we are in a period of ascendant state power and declining vigor of the national government. Federalism theory and the Supreme Court's federalism jurisprudence, such as it is, reflect this shift and oscillate between radically different views on the merits of a strong national government. Contemporary views range from the theory that states are the central guardians of liberty⁷³ against the Leviathan to the view that states are historical accidents, and thus the displacement of state law (or states) by Congress raises "no normative principle . . . that is worthy of protection."⁷⁴ The immediate consequence of the shifting nature of federalism jurisprudence for public health protection is that post-New Deal federalism has in turn decayed into an abstract, fragile, and often dysfunctional balance between national and subordinate authority. This balance is reflected in the Supreme Court's new neo-dual federalism jurisprudence which is increasingly incoherent⁷⁵ and disconnected from the reality of emerging patterns of multi-level public and private cooperation to address environmental problems.

Supreme Court federalism doctrines in many ways exacerbate the tension between the allocation of local and national risk assessment "prerogatives" because the essence of a constitutional federal system is the firm division of power between the national government and the states. This

⁷³ Professor Akhil Amar is a leading proponent of this view. See Amar, *supra* note 66; Akhil R. Amar, *Five Views of Federalism: "Converse-1983" in Context*, 47 VAND. L. REV. 1229 (1994).

⁷⁴ Edward L. Rubin & Malcolm Feeley, *Federalism: Some Notes on a National Neurosis*, 41 UCLA L. REV. 903, 909 (1994).

⁷⁵ This decay can be traced in the Supreme Court's preemption jurisprudence which has evolved from a weak to a strong formal preference for concurrent regulatory authority. Compare *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218 (1947) (ruling that absent a conflict with federal law, states may regulate matters not regulated by a federal act), with *Pacific Gas & Elec. Co. v. California State Energy Resources Conservation & Dev. Comm'n*, 461 U.S. 190, 205 (1983) (allowing concurrent state and federal regulation of disposal of nuclear waste), and *R.J. Reynolds Tobacco Co. v. Durham County*, 479 U.S. 130 (1986) (allowing concurrent state and federal taxation of goods stored in customs-bonded warehouses). The Court's application of the presumption remains hopelessly incoherent. Compare *Wisconsin Pub. Intervenor v. Mortier*, 501 U.S. 597 (1991) (holding that federal pesticide law does not preempt local regulation of pesticide application), with *Gade v. National Solid Wastes Management Ass'n*, 505 U.S. 88 (1992) (holding that the Occupational Safety and Health Act preempts state hazardous waste licensing scheme).

division either is based on a constitutional scheme of power fragmentation or is justified as a means to match problems with competent jurisdictions.⁷⁶ In our constitutional system, the emphasis has been on the establishment of negative liberties⁷⁷ or the location of regulatory competence. Federalism, as interpreted by a narrow majority of the current Supreme Court, is erroneously thought to require that allocations of power between the federal government and the states be exclusive to protect the states from the federal government.⁷⁸ This search bears little resemblance to the functional allocations demanded by geographic realities and ignores increasingly important players such as local governments, regional agencies, and private parties.

There have been three primary "real" changes in the federalism of public health protection since the environmental decade. First, we have a clearer understanding that risk assessment is a much more complicated process than originally assumed. Our understanding of the causes of cancer has changed over the course of time.⁷⁹ We now realize more clearly that the numbers generated by risk assessments are highly variable and often bear little, if any, relationship to actual improvements in public health.⁸⁰ Thus, the ultimate level of risk protection for exposure to contaminants in drinking

⁷⁶ See Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1225-31 (1977) (writing before *National League of Cities v. Usery*, 426 U.S. 833 (1976), was overruled in *Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528 (1985), and identifying three bases for national pollution control regulation: (1) the promotion of intrastate welfare; (2) the prevention of interstate spillovers; and (3) the implementation of national moral ideals).

⁷⁷ See Frank Michelman, *Law's Republic*, 97 YALE L.J. 1493, 1503 (1988) (stating that negative liberty "refers to absence of restraint against doing as one wants").

⁷⁸ See, e.g., *Seminole Tribe v. Florida*, 116 S. Ct. 1114 (1996) (holding, by a five to four vote, that sections of the Indian Gaming Regulatory Act of 1988, which authorized Indian tribes to sue states in federal court if states fail to negotiate in good faith to reach a compact on gaming activities, violated the Eleventh Amendment); *New York v. United States*, 505 U.S. 144 (1992) (holding, by a six to three vote, that the "take title" provision of the Low-Level Radioactive Waste Policy Amendments Act of 1985, which obligated states either to take title of radioactive waste generated in-state or to adopt federal regulations, violated the Tenth Amendment). See generally Gardbaum, *supra* note 69, at 796.

⁷⁹ For an insightful analysis of the scientific and sociological history of the use of dose-response curves in laboratory animals and the "one hit" theory to explain the risks of cancer from exposure to toxic chemicals, see ROBERT N. PROCTOR, *CANCER WARS: HOW POLITICS SHAPES WHAT WE KNOW AND DON'T KNOW ABOUT CANCER* 153-73 (1995).

⁸⁰ See Mark Elliot Shere, *The Myth of Meaningful Environmental Risk Assessment*, 19 HARV. ENVTL. L. REV. 409 (1995).

water cannot be dictated by numbers alone but is a social judgment in which both expert and ordinary consumer opinion is relevant and which may vary geographically.

Second, the legitimate limits of federal effectiveness are recognized more clearly. The maintenance of national pollution protection floors supplemented by stricter state standards works,⁸¹ but high federal standards are often insensitive to the regional variations in drinking water quality and treatment operations. More generally, cooperative federalism has proven better in theory than in practice as the New Deal faith in the need for national solutions has rapidly eroded in the past twenty years.⁸² Instead of cooperative or "marble cake" federalism, we now have either prefectorial federalism,⁸³ characterized by federal mandates without the necessary financial incentives to induce state compliance with them, or neo-dual federalism,⁸⁴ which seeks to compartmentalize governmental functions which should in fact should be shared. Both result in incomplete solutions to environmental problems. Prefectorial federalism would require states to comply with federal mandates but not fund the compliance costs or provide other incentives to comply; neo-dual federalism re-delegates power to the states with minimal federal controls and often ignores other stakeholder interests.⁸⁵

⁸¹ See, e.g., Harvard Group on Risk Management Reform, *Reform of Risk Regulation: Achieving More Protection at Less Cost*, 1 HUM. & ECOLOGICAL RISK ASSESSMENT 183, 186 (1996) [hereinafter Harvard Report] (observing that "over the past thirty years the United States has made substantial progress in cleaning up air, water and land, in part due to the strong regulatory presence of the federal government").

⁸² The debate over the failure of New Deal federalism has centered on whether federal programs become captured by the regulated or benefited community, or whether the efforts to isolate them from capture make them excessively cumbersome and costly to implement. See PAUL E. PETERSON ET AL., WHEN FEDERALISM WORKS 7-10 (1986).

⁸³ See Daniel J. Elazar, *Opening the Third Century of American Federalism*, 509 ANNALS AM. ACAD. POL. & SOC. SCI. 11, 12 (1990); JOHN E. THORSON, RIVER OF PROMISE, RIVER OF PERIL: THE POLITICS OF MANAGING THE MISSOURI RIVER 116 (1994).

⁸⁴ See Elazar, *supra* note 83, at 12; THORSON, *supra* note 83, at 116.

⁸⁵ There are a number of modern examples of neo-dual federalism decisions related to environmental protection. See PUD No. 1 v. Washington Dep't of Ecology, 511 U.S. 700 (1994) (holding that a state may regulate releases from a FERC-licensed facility to protect downstream water quality); California Coastal Comm'n v. Granite Rock Co., 480 U.S. 572 (1986) (concluding that a state may impose environmental conditions on mineral extraction in a national forest); California v. United States, 438 U.S. 645 (1978) (holding that a state may impose environmental conditions on the use of water from a federal reservoir as long as federal purposes are not frustrated).

The third real change reflects the increased capacity of states to regulate environmental quality. State willingness to enact regulation is still questioned and varies considerably among states.⁸⁶ However, over three decades of federal enforcement and planning grants to states have helped produce a much higher level of policymaking and enforcement competence at the state level.⁸⁷ Problems, of course, still remain, as the SDWA experience illustrates. Between 1974 and 1986, EPA did not focus on enforcement actions and states developed a policy of enforcing the SDWA through technical assistance to smaller systems.⁸⁸ After the 1986 Amendments, EPA civil enforcement actions accelerated,⁸⁹ but states continued to rely on technical assistance.⁹⁰ Between 1990 and 1994, states filed an average of 1555 actions per year, whereas EPA filed an average of 2626 actions per year.⁹¹

III. THE 1996 AMENDMENTS: OLD AND NEW FEDERALISM COMBINED

The 1996 Amendments retain the cooperative federalism model but modify it by simultaneously replacing the model with a new rule of reason at the federal level and some cautious experiments with decentralized risk assessment and management. The federal government retains the power to set national drinking water standards,⁹² and the states remain the federal government's enforcement agents.⁹³ The Amendments also harken back to the 1972 Clean Water Act⁹⁴ by creating a federally funded grant program to improve substandard public water systems.⁹⁵ However, the Amendments contain two new water quality protection approaches: (1) states have more flexibility to adopt alternative protection strategies, such as watershed

⁸⁶ See generally Symposium, *To Devolve, or Not to Devolve?: The (D)Evolution of Environmental Law*, 27 PAC. L.J. 1457 (1996).

⁸⁷ See Harvard Report, *supra* note 81, at 186 (acknowledging that federal involvement in clean water regulation over the last 30 years has been responsible in part for substantial progress in this area).

⁸⁸ See Devlin, *supra* note 16, at 499.

⁸⁹ See *id.*

⁹⁰ See *id.*

⁹¹ See *id.* at 500.

⁹² See 42 U.S.C.A. § 300g-1(b) (West Supp. 1996).

⁹³ See *id.* § 300g-2.

⁹⁴ 33 U.S.C. §§ 1251-1376 (Supp. II 1972).

⁹⁵ See 42 U.S.C.A. § 300j-12 (establishing the state revolving loan fund program).

protection;⁹⁶ and (2) risk assessment is subject to a rule of reason.⁹⁷

A. *The Case for a Federal Role Revisited*

The need for federal environmental protection seldom has been the subject of serious political debate since the late 1960s when Congress concluded that state air and water pollution environmental protection efforts were inadequate. The need for uniform drinking water standards would seem to be a settled question. Drinking water is regulated to prevent immediate and long-term real human health risks.⁹⁸ Public water system⁹⁹ consumers have an expectation, if not a right,¹⁰⁰ to safe drinking water whenever and wherever a tap is opened.¹⁰¹ Because the federal Constitution is widely characterized as a negative rather than affirmative charter of liberties, there is no right to a minimum level of environmental quality.¹⁰² However, the consistent regulation of drinking water to protect public health has created a legitimate expectation that all drinking water delivered by public water systems is safe and that the federal government has the responsibility to

⁹⁶ See *id.* § 300g-1(b)(7)(C)(v).

⁹⁷ See *id.* § 300g-1(b)(6).

⁹⁸ See H. REP. NO. 93-1185, at 1 (1974), *reprinted in* 1974 U.S.C.C.A.N. 6454, 6454 (stating that “the purpose of the [SDWA] is to assure that water supply systems serving the public meet minimum national standards for protection of public health”).

⁹⁹ A line between a public and private supplier has to be drawn. The 1996 Amendments draw it by defining a “community water system” as a PWS that “(A) serves at least 15 service connections used by year-round residents of the area served by the system; or (B) regularly serves at least 25 year-round residents.” 42 U.S.C.A. § 300f(15). The definition of PWS, as amended by the 1996 Amendments, excludes connections by means “other than a pipe” for purposes of meeting the 15 connection criterion if alternative safe water is provided for drinking, cooking, and bathing, or the water is centrally treated at the point of entry by the provider. See *id.* § 300f(4)(B). Irrigation districts that provide primarily agricultural service are not PWSs if alternative safe water is provided for drinking, cooking, and bathing, or the water is centrally treated at the point of entry by the provider. See *id.*

¹⁰⁰ See Stephen McCaffrey, *A Human Right to Water: Domestic and International Applications*, 5 GEO. INT’L ENVTL. L. REV. 1, 12 (1992) (arguing that the human right to water “may be inferred under the basic instruments of international human rights law”).

¹⁰¹ The counter argument is that uniform risk-minimization standards are inefficient and unfair to those forced to take higher standards than they would choose. See, e.g., James E. Krier, *On the Topology of Uniform Environmental Standards in a Federal System—And Why It Matters*, 54 MD. L. REV. 1226 (1995).

¹⁰² See *supra* note 77 and accompanying text.

regulate new risks as the information develops.¹⁰³ Compared to the protection of sustainable ecosystems, the protection of public health is analogous to the many explicit and implicit recognitions of the right to human dignity found in the Constitution. There is no rational reason to duplicate the unsanitary drinking water conditions that exist in too many developing countries throughout the world.¹⁰⁴ Bottled water should remain a choice, not a necessity.

Federal environmental standards were initially established for three specific reasons which continue to be relevant,¹⁰⁵ although the reasons are increasingly being questioned. First, federal standards were established to prevent states with low standards, generally southern and western states, from gaining a competitive advantage against states with higher standards.¹⁰⁶ This is the so-called prevention of the race-to-the-bottom argument.¹⁰⁷ The result was high, uniform, national technology-based risk reduction standards.¹⁰⁸ Second, federal regulation is necessary to prevent states from shifting the

¹⁰³ See Richard L. Williamson et al., *Gathering Danger: The Urgent Need to Regulate Toxic Substances That Can Bioaccumulate*, 20 *ECOLOGY L.Q.* 605, 693-700 (1993) (arguing that EPA should require PWSs to monitor levels of non-pesticide organics because bioaccumulations of such substances may present health risks).

¹⁰⁴ See Susan W. Putnam & Jonathan Baert Wiener, *Seeking Safe Drinking Water*, in *RISK VERSUS RISK: TRADEOFFS IN PROTECTING HEALTH AND THE ENVIRONMENT* 124, 125 (John D. Graham & Jonathan Baert Wiener eds., 1995) (noting the lack of public water treatment systems in developing countries and the fact that water-borne microbial diseases are responsible for millions of deaths each year).

¹⁰⁵ See Stewart, *supra* note 76, at 1225-31.

¹⁰⁶ See *id.* at 1212.

[g]iven the mobility of industry and commerce, any individual state or community may rationally decline unilaterally to adopt high environmental standards that entail substantial costs for industry and obstacles to economic development for fear that the resulting environmental gains will be more than offset by movement of capital to other areas with lower standards.

Id.

¹⁰⁷ See Revesz, *supra* note 9, at 1212 (explaining and critiquing the rationale, and arguing that competition among states for industry "can be expected to produce an efficient allocation of industrial activity among the states").

¹⁰⁸ See, e.g., *id.* at 1225-26 (arguing that the National Ambient Air Quality Standards ("NAAQS") enacted in the Clean Air Act are not an optimal form of federal regulation).

external costs of pollution to other states.¹⁰⁹ Third, national standards reflect the theory that all citizens have an equal entitlement to environmental quality.¹¹⁰ This reason is essentially a moral argument that environmental risk exposure is involuntary and thus protection levels should be the same for all citizens, regardless of the cost of achieving them, and perhaps even higher for vulnerable populations. This argument is one of the fundamental principles of the environmental justice movement.¹¹¹ Drinking water regulation, which serves to protect public health, presents a strong case for rejection of capacity defenses and geographic variations. Federal protection of safe drinking water is, however, more problematic under the first two rationales.

With regard to the first rationale, there is less likely to be a race-to-the-bottom on an issue of obvious concern to a state's own citizens. For example, Nevada is a likely race-to-the-bottom candidate, but the Nevada State Water Plan unequivocally states that "[i]t is the policy of the State of Nevada that water be provided which is safe for drinking and other domestic purposes."¹¹² With respect to the second argument, states generally cannot shift the costs of providing safe drinking water to other states except in cases where they fail to manage watersheds or common aquifers.¹¹³ The third rationale remains powerful, but different protection levels are not inconsistent with a high safety entitlement, especially as the rationale for pollution control

¹⁰⁹ See Stewart, *supra* note 76, at 1226-30 (arguing that "spillover effects" provide a strong case for uniform federal regulation).

¹¹⁰ See, e.g., S. REP. NO. 99-56, at 1 (1985), reprinted in 1986 U.S.C.C.A.N. 1566, 1566 (stating that "the Safe Drinking Water Act was enacted in 1974 in order to assure that *all* citizens served by public water systems would be provided high quality water supplies") (emphasis added).

¹¹¹ See Robert R.M. Verchick, *In a Greener Voice: Feminist Theory and Environmental Justice*, 19 HARV. WOMEN'S L.J. 23, 63 (1996) (asserting that health studies currently used for risk assessments fail to consider the variation in vulnerability to environmental threats among ethnic and gender subgroups of the population).

¹¹² DIVISION OF WATER PLANNING, STATE OF NEVADA, STATE WATER POLICY 26 (first draft, Mar. 15, 1995).

¹¹³ The law of interstate liability for ground water contamination is not well developed but it seems clear that a state would be liable for contaminating an interstate aquifer. See A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 10.02[4] (1988 & Supp. 1996).

shifts from moral outrage to more considered risk judgments.¹¹⁴ However, because many environmental issues are resource allocation questions, the need for uniform standards has been undermined.¹¹⁵

The case for uniform federal standards is no longer academic. Ironically, at the time Congress is crafting new federalism mechanisms, the United States Supreme Court is returning to an abstract rather than functional view of federal regulatory authority.¹¹⁶ Until the Supreme Court's decision in *United States v. Lopez*,¹¹⁷ the assumption—never vindicated by Supreme Court precedent—was that the New Deal expansion of the commerce power provided a sufficient basis for all federal pollution regulation.¹¹⁸ *Lopez* held that a federal statute exceeded the reach of the Commerce Clause for the first time in over sixty years¹¹⁹ and thus raised the threshold federalism question: does the federal government have any power to protect environmental quality? *Lopez* returned to the formalist pre-New Deal Commerce Clause jurisprudence of relying on indeterminate distinctions rather than on the effects of the activity on national economic activity as defined by Congress.¹²⁰ Congress' power is now limited to commercial as opposed to

¹¹⁴ See generally Bradley C. Bobertz, *Legitimizing Pollution Through Pollution Control Laws: Reflections on Scapegoating Theory*, 73 TEX. L. REV. 711 (1995) (arguing that it is a difficult, if not impossible, task to formulate absolute rights to environmental quality or baselines within our constitutional tradition); Daniel A. Farber, *Playing the Baseline: Civil Rights, Environmental Law, and Statutory Interpretation*, 91 COLUM. L. REV. 676, 687-91 (1991) (reviewing CASS R. SUNSTEIN, *AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE* (1990)).

¹¹⁵ See Harvard Report, *supra* note 81, at 198-200.

¹¹⁶ See Morton J. Horwitz, *The Constitution of Change: Legal Fundamentality Without Fundamentalism*, 107 HARV. L. REV. 32, 98 (1993) (stating that current Supreme Court opinions reflect "no recognition that the world is rapidly changing and that the Court's understanding of the role of law may be growing dangerously out of touch with American Society").

¹¹⁷ 115 S. Ct. 1624 (1995).

¹¹⁸ See Stephen M. Johnson, *United States v. Lopez: A Misstep, but Hardly Epochal for Federal Environmental Regulation*, 5 N.Y.U. ENVTL. L.J. 33, 57-58 (1996).

¹¹⁹ See Gardbaum, *supra* note 69, at 795.

¹²⁰ See *id.* (noting that *Lopez* perhaps "herald[s] a revival of the explicit pre-1937 position that federalism has full constitutional status"). Professor Gardbaum suggests a more functional judicial approach to limiting federal power by focusing on policing the legislative process rather than by the use of abstract and unworkable categories of regulated activity. See *id.* at 799. In brief, he suggests that the Necessary and Proper Clause, U.S. CONST. art. I, § 2, cl. 18, can be interpreted in light of the "hard look doctrine" of administrative law, see, e.g., *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402 (1971), and the

noncommercial activities.¹²¹ Many environmental statutes such as the Clean Water Act¹²² and the Surface Mine Control and Reclamation Act¹²³ are tied to the regulation of activities that have adverse impacts on interstate commerce.¹²⁴ However, the SDWA is tied to the protection of intrastate safety and the provision of public drinking water could be categorized as noncommercial.¹²⁵ Nonetheless, a "court may conclude that public water systems are commercial because they sell water and that they substantially affect interstate commerce because they use equipment purchased from other states or because some water users are directly engaged in interstate commerce."¹²⁶ Alternatively, the Amendments could be justified as an exercise in congressional protection of the implied right to travel.¹²⁷

B. *The Federalism Dimension of Risk: Cost and Capacity*

The current swing in federalism from a presumption in favor of the need for uniform national regulation to the toleration of interstate diversity has influenced the present structure of the Safe Drinking Water Act. The politics of risk aversion created by the environmental movement have produced two federalism "adjustments": (1) the incorporation of a rule of reason into risk assessment;¹²⁸ and (2) increased flexibility in compliance with federal standards,¹²⁹ sweetened with continued federal subsidization of

European Union principle of subsidiarity, to police congressional exercises of preemption. See Gardbaum, *supra* note 69, at 800-02. Congress must affirmatively determine that national regulation is required after affording full weight to the states' interest in autonomy. See *id.* at 831.

¹²¹ See *Lopez*, 115 S. Ct. at 1633 (noting that the test to be used is "whether an intrastate activity is commercial or non-commercial").

¹²² 33 U.S.C. §§ 1251-1387 (1994).

¹²³ 30 U.S.C. §§ 1201-1328 (1994).

¹²⁴ See John P. Dwyer, *The Commerce Clause and the Limits of Congressional Authority to Regulate the Environment*, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 10,421, 10,427 (1995).

¹²⁵ See *id.*

¹²⁶ *Id.*

¹²⁷ For an overview of the Supreme Court's development of the right to travel doctrine, see 3 RONALD D. ROTUNDA & JOHN E. NOWAK, *TREATISE ON CONSTITUTIONAL LAW: SUBSTANCE AND PROCEDURE* § 18.38 (2d ed. 1992).

¹²⁸ See 42 U.S.C.A. § 300g-1(b)(6) (West Supp. 1996).

¹²⁹ See *e.g., id.* § 300g-1(b)(7)(C)(v) (allowing states to establish alternative treatment requirements to filtration in certain circumstances).

the provision of safe drinking water.¹³⁰ The net result is that advocates of uniform standards bear a higher burden of justification than in the past, but deviations still remain the exception.

The 1996 Amendments partially reflect this shift from first to second generation environmental protection. Some of the final compromises reflect the familiar Miltonian struggle between zero risk standards and benefit-cost analysis. For example, the bill expressly authorizes the consideration of consumer willingness to pay for reductions in health risks in benefit-cost analysis.¹³¹ The long battle over the Republican and Democratic bills ultimately reflected a consensus that the establishment of drinking water standards is a problem in risk assessment and that the numbers produced by risk assessment are not always real;¹³² thus there is a need for the rule of reason, which incorporates geographic differences in risk exposure when a strong case can be made to depart from feasibility-based national standards. The protection of safe drinking water is no different from another pollution problem. The problem is: what is an acceptable level of risk? This is a mixed scientific-value judgment where there are no correct answers. The debate is about orders of magnitude of enhanced or reduced risk and takes place under conditions of extreme uncertainty.¹³³ The debate is usually about extremely high and abstract risk reduction levels rather than taking obvious and reasonably priced steps to avoid exposure to known risks. For example, EPA set the MCLG for lead at zero¹³⁴ but declined to set an MCL because it determined that a stringent MCL, which would reflect the public health goal of the SDWA, would not be feasible.¹³⁵

The Safe Drinking Water Act imposes substantial compliance costs

¹³⁰ See e.g., *id.* § 300j-12.

¹³¹ See *id.* § 300g-1(b)(3)(C)(iii).

¹³² See *supra* note 80 and accompanying text.

¹³³ See, e.g., *Natural Resources Defense Council, Inc. v. EPA*, 824 F.2d 1211, 1217 (D.C. Cir. 1987) (holding that EPA's adoption of a non-zero MCLG for vinylidene chloride was within the realm of agency discretion because evidence of carcinogenicity was "sparse and equivocal").

¹³⁴ See 40 C.F.R. § 141.51 (1996).

¹³⁵ See *Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper*, 56 Fed. Reg. 26,460, 26,477 (1991). EPA's refusal to set an MCL for lead was upheld in federal court. See *American Water Works Ass'n v. EPA*, 40 F.3d 1266, 1270-71 (D.C. Cir. 1994).

on the regulated community.¹³⁶ However, the community differs from the other major environmental programs, the Clean Air Act,¹³⁷ Clean Water Act,¹³⁸ RCRA,¹³⁹ and CERCLA,¹⁴⁰ because the "regulated community" is extremely diverse. The SDWA applies to major municipal drinking water systems as well as to the myriad of small "mom and pop" systems.¹⁴¹ EPA's focus on technological detectability makes it financially infeasible for many small systems to comply with required contaminant levels and filtration requirements, and thus the policy has created substantial pressures for relief from compliance with low risk standards.¹⁴² In effect, states and local suppliers have raised a capacity defense to federal standards.

"Capacity defense" is a term used to characterize the arguments of developing countries that they should not have to comply with high international environmental standards.¹⁴³ The defense, an outgrowth of developing country equity claims, argues either that a country lacks the resources to implement the standard or that it can trade-off short term economic benefits against long term environmental risk reduction and thus is entitled to adopt a lower environmental standard.¹⁴⁴ One of the emerging principles of international environmental law posits that states have common

¹³⁶ A recent study indicates that compliance costs with the 1986 Amendments ranges from \$1.5 to \$2.4 billion per year from 1993 to 2000. See HARVEY S. JAMES, JR., IMPLEMENTING A REGULATORY BUDGET: ESTIMATING THE MANDATED PRIVATE EXPENDITURE OF THE CLEAN AIR ACT AND THE SAFE DRINKING WATER ACT AMENDMENTS 19 (Ctr. Study Am. Bus. Working Paper No. 161, 1996).

¹³⁷ 42 U.S.C. §§ 7401-7671q (1994).

¹³⁸ 33 U.S.C. §§ 1251-1387 (1994).

¹³⁹ 42 U.S.C. §§ 6901-6992k.

¹⁴⁰ *Id.* §§ 9601-9675.

¹⁴¹ The national primary drinking water regulations established by the SDWA apply to all public water systems. See *id.* § 300f. A PWS is any system that provides water for public consumption and has at least 15 service connections or regularly serves at least 25 individuals. *Id.* § 300f(4).

¹⁴² See, e.g., *Small Systems Need Broad-Based Assistance to Comply with Law, Officials at All Levels Say*, 18 Env't Rep. (BNA) 2367 (Mar. 25, 1988); *States Constrained by Lack of Funds to Meet Federal Standards, GAO Says*, 24 Env't Rep. (BNA) 634 (Aug. 13, 1993) (noting that state estimates of costs of testing for contaminants range from \$2,500 to \$10,000 for each set of analyses).

¹⁴³ See 1 PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 219-20 (1995).

¹⁴⁴ See *id.*

but differentiated duties to comply with environmental mandates.¹⁴⁵ This principle is one of the many efforts, united under the umbrella concept of sustainable development, to bridge the gap between developed and developing nations.¹⁴⁶ It recognizes that states have unequal resources to devote to environmental protection and perhaps that the level of environmental protection can be lower than adopted by developed countries.¹⁴⁷

The 1996 Amendments do not follow the international analogy to its logical conclusion and make capacity a permanent defense to compliance with national standards. The Amendments impose a duty on all states, under penalty of losing twenty percent of its federal allotment, to develop a capacity development strategy for sub-standard systems.¹⁴⁸ More importantly, the Amendments apply second generation federal financing techniques developed for public sewage treatment systems to purification systems. The Clean Water Act initially provided grants to finance publicly owned treatment works ("POTWs");¹⁴⁹ but too much money was lost in a non-cost effective manner, so Congress switched to revolving loans.¹⁵⁰ The Amendments authorize federal grants to create state revolving loan funds to provide monies to bring public water systems up to the standards imposed by the SDWA.¹⁵¹ State loan funds may be used for direct loans or as a source of security for leveraged loans,¹⁵² and are subject to stringent technical, managerial, and financial capability standards.¹⁵³ In addition to capacity

¹⁴⁵ See *id.* at 217-18.

¹⁴⁶ See *id.* at 205-08.

¹⁴⁷ See *id.* at 217.

¹⁴⁸ See 42 U.S.C.A. § 300j-12(a)(1)(G)(I) (West Supp. 1996).

¹⁴⁹ See 33 U.S.C. § 1281(g) (Supp. II 1972).

¹⁵⁰ See 33 U.S.C. § 1381 (Supp. V 1987).

¹⁵¹ See 42 U.S.C.A. § 300j-12. Congress appropriated \$1.3 billion for fiscal year 1997 but limited the use of the monies for capitalization grants in conflict with the broader purposes authorized in the Amendments. See *Drinking Water Program Gets \$1.3 Billion for State Revolving Loan Fund in Money Bill*, 27 Env't Rep. (BNA) 1223 (Oct. 4, 1996).

¹⁵² See 42 U.S.C.A. § 300j-12(a)(2).

¹⁵³ See *id.* § 300j-12(a)(3)(A)(i). If it is found that a state does not have primary enforcement responsibility, the Amendments provide that the state allotment shall not be deposited in a state fund but must be reserved as needed by the Administrator for public enforcement. See *id.* § 300j-12(a)(1)(F). Any excess funds will be reallocated to states with primary enforcement responsibility. See *id.*

construction, the loan funds may be used for source water protection.¹⁵⁴ The increased emphasis on source water protection is one of the major innovations of the Amendments. Disadvantaged communities are eligible for subsidies including loan forgiveness.¹⁵⁵ Direct grants are also available to states to develop source water protection partnership programs.¹⁵⁶

Other place-based protection source water strategies are authorized by the Amendments. Place-based geohydrology defenses include: utilization of point-of-use treatment systems for small water systems;¹⁵⁷ substitution of effective watershed management for filtration;¹⁵⁸ and relief from monitoring requirements, other than for microbial contaminants, disinfectants, and disinfection by-products, or corrosion by-products, when earlier monitoring failed to detect the contaminant in the ground or surface water and the state certifies that the hydrology of the area makes it unlikely that the contaminant will be detected by further monitoring.¹⁵⁹ The Act retains the non-technological source protection options of the sole source aquifer demonstration program¹⁶⁰ and adds the possible substitution of watershed management for filtration by a state exercising primary enforcement responsibility.¹⁶¹ A state's decision to permit watershed management as an alternative to filtration is subject to approval by the EPA Administrator.¹⁶² EPA may consider the protection afforded by watershed management in deciding whether a system is required to filter surface water supplies.¹⁶³ The watershed management alternative is of immediate benefit to New York City because it can save several billion dollars by protecting its Catskill and

¹⁵⁴ See *id.* § 300j-12(g)(2).

¹⁵⁵ See *id.* § 300j-12(d)(1).

¹⁵⁶ See *id.* § 300j-14(a). States are required to adopt source water assessment protection programs that must delineate the areas from which public water systems draw supplies and identify the regulated contaminants which may present a threat to public health. See *id.* § 300j-13(a).

¹⁵⁷ See *id.* § 300g-1(b)(4)(E)(ii).

¹⁵⁸ See *id.* § 300g-1(b)(7)(C)(v).

¹⁵⁹ See *id.* § 300g-7(a), (b).

¹⁶⁰ See *id.* § 300h-6.

¹⁶¹ See *id.* § 300g-1(b)(7)(C)(v).

¹⁶² See *id.*

¹⁶³ See *id.* § 300g-1(b)(7)(C)(i); see also Sarah J. Meyland, *Land Use & the Protection of Drinking Water Supplies*, 10 PACE ENVTL. L. REV. 563, 569-71 (1993).

Delaware watersheds as an alternative to filtration.¹⁶⁴

C. Congressional Risk Assessment

1. Radon and Chlorine By-products

Federalism can be served when Congress acts to resolve risk level controversies. This assertion is, of course, a slippery slope because Congress has a tendency to seek quick solutions to specific risks that excite public concern regardless of the scientific merits of the scientific reports of the case for regulation. Nevertheless, there is a legitimate role for Congress when the science behind the particular substance raises serious questions about the need for any regulation, the economic costs of compliance with a conservative standard are high in relation to likely benefits, and the issue is of nationwide concern rather than of particular interest to a state or industry. Congress' resolution of the chlorine and radon debates illustrate the strengths of congressional risk assessment when these conditions prevail.

One of the major drinking water issues in recent years has been the standards for chlorination of public drinking water supplies.¹⁶⁵ Chlorination of drinking water supplies was one of the major public health advances of this century,¹⁶⁶ but in recent years there is some evidence that chlorine by-products pose cancer risks.¹⁶⁷ The recent concern that the longstanding, economical, and effective practice of adding chlorine to drinking water to eliminate microbial diseases poses cancer risks illustrates the argument that safe drinking water levels depend on the risk to be minimized.¹⁶⁸ As a recent analysis of the problem concludes: "[c]oncern over the potential carcinogenicity of chlorine and its by-products has pushed society to explore other disinfection alternatives. But would these options be worse than the

¹⁶⁴ See Meyland, *supra* note 163, at 569; *New York City Will Get Interim Approval for Watershed Protection Plan, EPA Says*, 27 Env't Rep. (BNA) 1147 (Sept. 20, 1996). EPA announced on September, 10, 1996, that it intended to issue in December, 1996, an interim determination that a watershed protection plan for the city's 2,000 square mile watershed is adequate to avoid filtration. See *id.* at 1147-48.

¹⁶⁵ See Putnam & Wiener, *supra* note 104, at 124.

¹⁶⁶ See *id.* at 125-26.

¹⁶⁷ See *id.* at 127-32.

¹⁶⁸ See *id.* at 141-45 (comparing health risks of microbial diseases and chlorine by-products).

process they replace? None of the chemical alternatives has both the biocidal and residual properties of chlorine, nor many of its secondary benefits."¹⁶⁹ In the end, however, Congress erred on the side of safety and preserved the Administrator's power to issue previously proposed disinfectant and disinfection by-product rules.¹⁷⁰

Congress made the opposite decision with respect to radon. Radon is a gas produced by decaying radium;¹⁷¹ radium is the result of the decay of uranium-238.¹⁷² This element occurs naturally in granite, shale and phosphate-bearing formations and the gas filters up to the surface through cracks and fissures.¹⁷³ Exposure can occur through air¹⁷⁴ or water.¹⁷⁵ Most of the regulatory efforts have been focused on the establishment of indoor air standards in the range of four picocuries,¹⁷⁶ but the Senate version of the Amendments had a similarly conservative standard for drinking water.¹⁷⁷ Since a 1986 EPA study presented an estimate that radon is responsible for up to 20,000 lung cancer deaths annually in the United States,¹⁷⁸ that statistic has been widely quoted.¹⁷⁹ A compilation of studies of Japanese atomic bomb victims, however, failed to reveal any link between radon exposure and cancer at radiation levels below 200 rads.¹⁸⁰ A study of cancer rates in uranium miners by the National Research Council of the National Academy of Sciences showed increased cancer risk from exposure to very high levels of radon.¹⁸¹ However, the link between cancer risk and radon exposure at low radiation levels is inconclusive at best and highly suspect.¹⁸² In the end, Congress did not set drinking water standards for radon. The 1996

¹⁶⁹ *Id.* at 147.

¹⁷⁰ See 42 U.S.C.A. § 300g-1(b)(2)(C) (West Supp. 1996).

¹⁷¹ See LEONARD A. COLE, *ELEMENT OF RISK: THE POLITICS OF RADON* 8 (1993).

¹⁷² See *id.* at 8-9.

¹⁷³ See *id.* at 8.

¹⁷⁴ See *id.* at 8-9.

¹⁷⁵ See PROCTOR, *supra* note 79, at 197 (noting that radon can be released from water).

¹⁷⁶ See COLE, *supra* note 171, at 83-87.

¹⁷⁷ See S. REP. NO. 104-169, at 15 (1995) (proposing a standard of 3,000 picocuries that takes into account the greater density of water compared to air).

¹⁷⁸ U.S. ENVTL. PROTECTION AGENCY, *A CITIZEN'S GUIDE TO RADON* 2 (1st ed. 1986).

¹⁷⁹ See, e.g., Robert D. King, *The Legal Implications of Residential Radon Contamination*, 18 WM. & MARY J. ENVTL. L. 107, 109 (1993).

¹⁸⁰ See COLE, *supra* note 171, at 26-27.

¹⁸¹ See *id.* at 27-28.

¹⁸² See *id.* at 28-31.

Amendments require EPA to withdraw its proposed standard of 300 picocuries per liter.¹⁸³ The Amendments further provide that a primary drinking water regulation for radon can only be proposed after a National Academy of Sciences risk assessment study.¹⁸⁴

2. "Good Science" and "Good Economics"

The Amendments seek to increase the use of science and benefit-cost analysis in future national standards and MCLs and MCLGs. Science remains a widely respected source of legitimate environmental standards, but there is no agreement on what constitutes acceptable science for purposes of setting environmental standards. In his recent book *Cancer Wars*,¹⁸⁵ Robert Proctor makes a useful distinction between two types of conservatism in risk assessment debates.¹⁸⁶ Public health conservatism is the environmental movement's response to the problem of scientific uncertainty.¹⁸⁷ Chemicals are suspected of causing serious adverse health effects but causal links cannot be clearly established by the existing state of knowledge.¹⁸⁸ To bridge the gap, a precautionary approach which allows the regulator to err "conservatively" on the side of safety was proposed and legitimated by the courts.¹⁸⁹ This precautionary approach has been opposed by advocates of the conservative use of "good science": "[t]o estimate a hazard 'conservatively' in the scientific sense means taking care not to overestimate a hazard."¹⁹⁰ The modern problem with risk assessment is that the concrete costs of public health conservatism are often too great compared to the abstract benefits achieved.¹⁹¹

Although the search for an appropriate remedy for reformed risk assessment has occupied a great deal of intellectual and political energy, the

¹⁸³ See H.R. REP. NO. 104-632, at 4-5 (1996), reprinted in 1996 U.S.C.C.A.N. 1366, 1367-68.

¹⁸⁴ See 42 U.S.C.A. § 300g-1(b)(13)(B) (West Supp. 1996)

¹⁸⁵ PROCTOR, *supra* note 79.

¹⁸⁶ See *id.* at 261-65.

¹⁸⁷ See *id.* at 264.

¹⁸⁸ See *id.* at 257-61.

¹⁸⁹ Two leading cases are *Reserve Mining Co. v. EPA*, 514 F.2d 492 (8th Cir. 1975) (en banc), and *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir. 1976) (en banc).

¹⁹⁰ PROCTOR, *supra* note 79, at 262.

¹⁹¹ See, e.g., Harvard Report, *supra* note 81, at 194.

remedy remains elusive. Recently, there seems to be an increasing consensus among risk "experts" that risk assessment needs a mid-course correction in the form of a rule of reason based on both economics and science.¹⁹² Two factors drive the need for a correction. First, the bedrock assumption of toxic risk regulation that there is no safe threshold for exposure limits from most chemicals is eroding. The draft report of the Commission on Risk Assessment and Management summarizes the evolving theories on the cause of cancer: "[t]he distinction between 'nonthreshold' carcinogens and 'threshold' noncarcinogens is increasingly blurred. The standard assumption that all carcinogens are mutagens and that their dose-response relationships can be modeled by assuming low-dose linearity is inconsistent with a variety of 'secondary' carcinogenesis now identified."¹⁹³

Second, and related to the first factor, these scientific developments reinforce the argument that greater attention be given to cost and benefits. A full benefit-cost analysis is impossible, but it is possible to achieve a better or "reasonable relationship between the incremental costs and the incremental benefits"¹⁹⁴ of public health rules. For example, the World Health Organization has concluded that "there has been little convincing evidence of carcinogenicity of ingested asbestos in epidemiological studies of populations with drinking-water supplies containing high concentrations of asbestos."¹⁹⁵

The Amendments attempt to solve the tension between high expectations and the anticipated results of a benefit-cost analysis by allowing risk trade-offs based on "the best available, peer-reviewed science."¹⁹⁶ The Administrator is no longer subject to the duty to regulate twenty-five contaminants every three years,¹⁹⁷ but he or she must limit new unregulated candidates for MCLGs to those "that present the greatest public health

¹⁹² See *id.* at 193 (recommending that "Congress should require regulations to achieve a reasonable relationship between costs and benefits when regulating risks").

¹⁹³ COMMISSION ON RISK ASSESSMENT AND RISK MANAGEMENT, RISK ASSESSMENT AND RISK MANAGEMENT IN REGULATORY DECISION-MAKING 19-20 (draft report, June 13, 1996).

¹⁹⁴ Harvard Report, *supra* note 81, at 193.

¹⁹⁵ WORLD HEALTH ORG., *supra* note 37, at 42.

¹⁹⁶ 42 U.S.C.A. § 300g-1(b)(3)(A)(i) (West Supp. 1996).

¹⁹⁷ See Pub. L. No. 104-182 § 102(b), 110 Stat. 1613, 1620 (1996) (providing that 42 U.S.C. § 300g-1(b)(3)(C) (1994) is superseded by § 102(a) of the Amendments).

concern,”¹⁹⁸ subject to an environmental justice control provision.¹⁹⁹ The Administrator must consider the impact on vulnerable populations who face enhanced risks from exposure to the prospective MCLG contaminants.²⁰⁰ Interim national primary drinking water regulations must address “an urgent threat to public health.”²⁰¹ All actions must be based on “the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices,”²⁰² with, *inter alia*, appropriate upper and lower risk estimates.²⁰³ Furthermore, when EPA proposes adopting new MCLs it must consider and analyze “[t]he incremental costs and benefits associated with each alternative maximum contaminant level.”²⁰⁴

The Amendments directly reflect the concept of risk trade-offs developed by Senator Daniel Moynihan of New York.²⁰⁵ The Administrator may depart from setting the MCL at the technically feasible level “if the technology, treatment techniques, and other means used to determine the feasible level would result in an increase in the health risk from drinking water,”²⁰⁶ either by increasing the concentration of other contaminants or

¹⁹⁸ 42 U.S.C.A. § 300g-1(b)(1)(C).

¹⁹⁹ *See id.*

²⁰⁰ *See id.* The Amendments mandate a study to identify populations who face greater risk than the general population from contaminated drinking water. *See id.* § 300j-18(a).

²⁰¹ *Id.* § 300g-1(b)(1)(D).

²⁰² *Id.* § 300g-1(b)(3)(A)(i).

²⁰³ *See id.* § 300g-1(b)(3)(B)(iii). Congress has enshrined the equation of good science with peer-reviewed science articulated by the Supreme Court in *Daubert v. Merrell Dow Pharm.*, 509 U.S. 579 (1993) (abandoning the Frye test and allowing admission of scientific evidence “if indicia of reliability, such as peer-review, are present”). I have previously criticized the Court’s narrow formulation of “good science.” *See* A. Dan Tarlock, *The Futile Search for Environment Laws Based on “Good Science,”* 1 INT’L J. BIOSCIENCES & L. 9 (1996).

²⁰⁴ 42 U.S.C.A. § 300g-1(b)(3)(C)(i)(IV).

²⁰⁵ Senator Moynihan first introduced the concept of balancing scientific certainty and benefit-cost analysis in 1991. *See* Environmental Risk Reduction Act of 1991, S. 2132, 102d Cong. After the bill failed to be enacted, Senator Moynihan reintroduced the bill in 1993. *See* Environmental Risk Reduction Act of 1993, S. 110, 103d Cong.; 141 CONG. REC. S373, S373 (Jan. 4, 1995). This bill was also not enacted into law. *See id.* at S373. As he introduced the follow-on bill, Environmental Risk Evaluation Act of 1995, S. 123, 104th Cong., Senator Moynihan stated: “A far better legislative question to ask EPA to address when setting environmental regulations is ‘How much are we willing to pay to reduce risk by what amount, given all the uncertainties about risks, costs and benefits of control’ rather than ‘What is the safe level of exposure.’” 141 CONG. REC., at S373.

²⁰⁶ 42 U.S.C.A. § 300g-1(b)(5)(A).

interfering with the efficacy of drinking water treatment.²⁰⁷ The Amendments mandate that the Administrator must set the treatment techniques or MCLs to "minimize the overall risk of adverse health effects by balancing the risk from the contaminant and the risk from other contaminants."²⁰⁸ In short, benefit-cost analysis is now a possible defense to compliance with feasibility-based standards. The latter remain the norm, but it is now possible to depart from feasibility when the compliance costs and expected benefits are substantially disproportionate due to local conditions or other factors.

3. *Local Enforcement*

Citizen enforcement of environmental laws is one of the great contributions of United States law to domestic and global environmental protection. Citizen enforcement has long been a part of the SDWA,²⁰⁹ but the Amendments expand it by linking it to information disclosure or "the right to know."²¹⁰ The expansion of citizen enforcement can also be characterized as a federalism response because it gives those most impacted by a risk assessment the necessary information to make a more informed choice.²¹¹ The basic problem with state administration was the lack of enforcement capability. The Act contains the usual citizen suit provision, but the Amendments augment citizen suits with a community disclosure program.²¹² Suppliers must notify their customers of any failure to comply with applicable MCLs or tests proscribed by national primary drinking water regulations²¹³ and, where the violation has the potential to have serious adverse effects on human health as a result of short-term exposure, "provide a clear and readily understandable explanation of the violation."²¹⁴ Suppliers also must provide annual consumer confidence reports to their customers,²¹⁵

²⁰⁷ *Id.*

²⁰⁸ *See id.* § 300g-1(b)(5)(B)(i).

²⁰⁹ Congress enacted the citizen suit provision as part of the 1974 SDWA. *See* 42 U.S.C. § 300j-8 (Supp. IV 1974).

²¹⁰ 42 U.S.C.A. § 300g-1(b)(3)(B).

²¹¹ *See generally* Clayton P. Gillette & James E. Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027 (1990) (providing an analysis of the problem of democratizing risk assessment).

²¹² *See* 42 U.S.C.A. § 300g-3(c).

²¹³ *See id.* § 300g-3(c)(1)(A)(i).

²¹⁴ *Id.* § 300g-3(c)(2)(C).

²¹⁵ *See id.* § 300g-3(c)(4)(A).

although it will be at least two years until EPA publishes a disclosure manual.²¹⁶

CONCLUSION

The 1996 Amendments represent a cautious evolution of federal, state, and local relations in United States pollution control law. The first generation of environmental laws enacted in the 1970s can be analogized to a parent with a young teenager who will not clean his or her room or practice the piano. All delegations of authority are characterized by clear and uniform standards and strict compliance deadlines. The assumption is that strong parental guidance, command and control, and possibly “preemption” of the child’s authority is necessary to compel effective action. As the child matures, it is sometimes possible to experiment with performance standards that allow the child some discretion to decide how and when to perform the assigned task. This balance is what the 1996 Amendments seek to achieve. Compliance with strict national drinking water standards that minimize public health risks through the application of technology remains the norm. However, states and local water suppliers now have some discretion to use alternative methods of protecting end-of-the-tap supplies, such as source water protection, and strict “zero” risk standards can be modified when a strong showing of scientific and economic irrationality can be established. The Amendments are a significant federalism experiment and bear close scrutiny to see if the 1996 SDWA reforms can be applied to other pollution control and prevention programs.

²¹⁶ See *Base Requirements for Consumer Reports Under Development by Drinking Water Office*, 27 Env’t Rep. (BNA) 1146 (Sept. 20, 1996).

